

## Spool File For Oracle Students Trained by Mr.Sathish Yellanki

---

SQL> cl scr

SQL> SELECT RN, Ename, Sal  
2 FROM  
3 (  
4 SELECT ROWNUM RN, Ename, Sal  
5 FROM Emp  
6 )  
7 WHERE RN = &GiveRn;  
Enter value for given: 1

RN	ENAME	SAL
1	KING	5000

SQL> /  
Enter value for given: 2

RN	ENAME	SAL
2	BLAKE	2850

SQL> /  
Enter value for given: 3

RN	ENAME	SAL
3	CLARK	2450

SQL> ED  
Wrote file afiedt.buf

1 SELECT RN, Ename, Sal  
2 FROM  
3 (  
4 SELECT ROWNUM RN, Ename, Sal  
5 FROM Emp  
6  
7\* WHERE RN &GiveOper  
SQL> /  
Enter value for giveoper: =1

RN	ENAME	SAL
----	-------	-----

---

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---

1 KING 5000

SQL> /

Enter value for giveoper: IN(1, 5, 9)

RN	ENAME	SAL
1	KING	5000
5	MARTIN	1250
9	WARD	1250

SQL> /

Enter value for giveoper: <= 5

RN	ENAME	SAL
1	KING	5000
2	BLAKE	2850
3	CLARK	2450
4	JONES	2975
5	MARTIN	1250

SQL> /

Enter value for giveoper: >= 10

RN	ENAME	SAL
10	FORD	3000
11	SMITH	800
12	SCOTT	3000
13	ADAMS	1100
14	MILLER	1300

SQL> /

Enter value for giveoper: BETWEEN 1 AND 5

RN	ENAME	SAL
1	KING	5000
2	BLAKE	2850
3	CLARK	2450
4	JONES	2975
5	MARTIN	1250

---

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---

SQL> /

Enter value for giveoper: BETWEEN 6 AND 10

RN	ENAME	SAL
6	ALLEN	1600
7	TURNER	1500
8	JAMES	950
9	WARD	1250
10	FORD	3000

SQL> /

Enter value for giveoper: BETWEEN 11 AND 16

RN	ENAME	SAL
11	SMITH	800
12	SCOTT	3000
13	ADAMS	1100
14	MILLER	1300

SQL> cl scr

SQL> ED

Wrote file afiedt.buf

```
1 SELECT ROWNUM RN, Ename, Sal
2 FROM Emp
3 GROUP BY ROWNUM, Ename, Sal
4* HAVING ROWNUM <GiveVal
```

SQL> /

Enter value for giveval: = 1

RN	ENAME	SAL
1	KING	5000

SQL> /

Enter value for giveval: = 2

RN	ENAME	SAL
2	BLAKE	2850

---

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---

SQL> /

Enter value for giveval: <= 5

RN	ENAME	SAL
5	MARTIN	1250
3	CLARK	2450
4	JONES	2975
1	KING	5000
2	BLAKE	2850

SQL> /

Enter value for giveval: IN(1, 5, 9)

RN	ENAME	SAL
5	MARTIN	1250
9	WARD	1250
1	KING	5000

SQL> /

Enter value for giveval: BETWEEN 1 AND 5

RN	ENAME	SAL
5	MARTIN	1250
3	CLARK	2450
4	JONES	2975
1	KING	5000
2	BLAKE	2850

SQL> cl scr

SQL> ED

Wrote file afrect.buf

```
1  SELECT Ename, Sal, E.Deptno, Dname, Grade
2  FROM Emp E, Dept D, Salgrade S
3  WHERE Sal IN
4  (
5  SELECT E2.Sal
6  FROM
7      (
8      SELECT ROWNUM RN, E1.*
```

---

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```
9          FROM
10          (
11              SELECT Ename, Sal, Deptno, Job
12              FROM Emp
13              ORDER BY Sal DESC
14              ) E1
15          ) E2
16  WHERE E2.RN = &Rn
17  )
18  AND E.Deptno = D.Deptno AND
19* E.Sal BETWEEN S.Losal AND S.HiSal
SQL> /
Enter value for rn: 1
```

ENAME	SAL	DEPTNO	DNAME	GRADE
KING	5000	10	ACCOUNTING	5

```
SQL> /
Enter value for rn: 2
```

ENAME	SAL	DEPTNO	DNAME	GRADE
SCOTT	3000	20	RESEARCH	4
FORD	3000	20	RESEARCH	4

```
SQL> SET AUTOTRACE ON EXPLAIN
SQL> /
Enter value for rn: 2
```

ENAME	SAL	DEPTNO	DNAME	GRADE
SCOTT	3000	20	RESEARCH	4
FORD	3000	20	RESEARCH	4

Execution Plan

Plan hash value: 3775018254

Id	Operation	Name	Rows	Bytes
Cost (%CPU)	Time			

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0		SELECT STATEMENT				1		107
12		(17)  00:00:01						
1		NESTED LOOPS				1		107
12		(17)  00:00:01						
2		NESTED LOOPS				1		68
9		(23)  00:00:01						
* 3		HASH JOIN SEMI				1		46
8		(25)  00:00:01						
4		TABLE ACCESS FULL		EMP		14		462
3		(0)  00:00:01						
5		VIEW		VW_NSO_1		14		182
4		(25)  00:00:01						
* 6		VIEW				14		364
4		(25)  00:00:01						
7		COUNT						
8		VIEW				14		182
4		(25)  00:00:01						
9		SORT ORDER BY				14		546
4		(25)  00:00:01						
10		TABLE ACCESS FULL		EMP		14		546
3		(0)  00:00:01						
11		TABLE ACCESS BY INDEX ROWID		DEPT		1		22
1		(0)  00:00:01						
* 12		INDEX UNIQUE SCAN		DEPT_PRIMARY_KEY		1		
0		(0)  00:00:01						
* 13		TABLE ACCESS FULL		SALGRADE		1		39
3		(0)  00:00:01						

Predicate Information (identified by operation id):

```

3 - access("SAL"="$nso_col_1")
6 - filter("E2"."RN"=2)
12 - access("E"."DEPTNO"="D"."DEPTNO")
13 - filter("E"."SAL">="S"."LOSAL" AND "E"."SAL"<="S"."HISAL")

```

Note

- dynamic sampling used for this statement

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---

```
SQL> SET AUTOTRACE OFF EXPLAIN
SQL> cl scr
```

```
SQL> SELECT RN, Ename, Sal
2 FROM
3 (
4 SELECT ROWNUM RN, Ename, Sal
5 FROM Emp
6 )
7 WHERE MOD(RN, 2) = 0;
```

RN	ENAME	SAL
2	BLAKE	2850
4	JONES	2975
6	ALLEN	1600
8	JAMES	950
10	FORD	3000
12	SCOTT	3000
14	MILLER	1300

7 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT RN, Ename, Sal
2 FROM
3 (
4 SELECT ROWNUM RN, Ename, Sal
5 FROM Emp
6 )
7* WHERE MOD(RN, 2) = 1
SQL> /
```

RN	ENAME	SAL
1	KING	5000
3	CLARK	2450
5	MARTIN	1250
7	TURNER	1500
9	WARD	1250
11	SMITH	800

---

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---

13 ADAMS 1100

7 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT ROWNUM RN, Ename, Sal
2 FROM Emp
3 GROUP BY ROWNUM, Ename, Sal
4* HAVING MOD(ROWNUM, 2) = 0
```

SQL> /

GROUP BY ROWNUM, Ename, Sal  
\*

ERROR at line 3:

ORA-00933: SQL command not properly ended

SQL> ED

Wrote file afiedt.buf

```
1 SELECT ROWNUM RN, Ename, Sal
2 FROM Emp
3 GROUP BY ROWNUM, Ename, Sal
4* HAVING MOD(ROWNUM, 2) = 0
```

SQL> /

RN	ENAME	SAL
14	MILLER	1300
8	JAMES	950
12	SCOTT	3000
4	JONES	2975
2	BLAKE	2850
6	ALLEN	1600
10	FORD	3000

7 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT ROWNUM RN, Ename, Sal
2 FROM Emp
```

---

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```
.....
3  GROUP BY ROWNUM, Ename, Sal
4*  HAVING MOD(ROWNUM, 2) = 1
SQL> /
```

RN	ENAME	SAL
5	MARTIN	1250
7	TURNER	1500
11	SMITH	800
3	CLARK	2450
13	ADAMS	1100
9	WARD	1250
1	KING	5000

7 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT ROWID, Ename, Job
2  FROM Emp
3  /
```

ROWID	ENAME	JOB
AAAA0QAAEAAAAH9AAA	KING	PRESIDENT
AAAA0QAAEAAAAH9AAB	BLAKE	MANAGER
AAAA0QAAEAAAAH9AAC	CLARK	MANAGER
AAAA0QAAEAAAAH9AAD	JONES	MANAGER
AAAA0QAAEAAAAH9AAE	MARTIN	SALESMAN
AAAA0QAAEAAAAH9AAF	ALLEN	SALESMAN
AAAA0QAAEAAAAH9AAG	TURNER	SALESMAN
AAAA0QAAEAAAAH9AAH	JAMES	CLERK
AAAA0QAAEAAAAH9AAI	WARD	SALESMAN
AAAA0QAAEAAAAH9AAJ	FORD	ANALYST
AAAA0QAAEAAAAH9AAK	SMITH	CLERK
AAAA0QAAEAAAAH9AAL	SCOTT	ANALYST
AAAA0QAAEAAAAH9AAM	ADAMS	CLERK
AAAA0QAAEAAAAH9AAN	MILLER	CLERK

14 rows selected.

```
SQL> SELECT ROWID, Ename, Job
2  FROM Emp
3  WHERE ROWID = 'AAAA0QAAEAAAAH9AAF' ;
```

---

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---

ROWID	ENAME	JOB
AAAA0QAAEAAAAH9AAF	ALLEN	SALESMAN

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT ROWID, Ename, Job
2  FROM Emp
3* WHERE ROWID < 'AAAA0QAAEAAAAH9AAF'
SQL> /
```

ROWID	ENAME	JOB
AAAA0QAAEAAAAH9AAA	KING	PRESIDENT
AAAA0QAAEAAAAH9AAB	BLAKE	MANAGER
AAAA0QAAEAAAAH9AAC	CLARK	MANAGER
AAAA0QAAEAAAAH9AAD	JONES	MANAGER
AAAA0QAAEAAAAH9AAE	MARTIN	SALESMAN

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT ROWID, Ename, Job
2  FROM Emp
3* WHERE ROWID > 'AAAA0QAAEAAAAH9AAF'
SQL> /
```

ROWID	ENAME	JOB
AAAA0QAAEAAAAH9AAG	TURNER	SALESMAN
AAAA0QAAEAAAAH9AAH	JAMES	CLERK
AAAA0QAAEAAAAH9AAI	WARD	SALESMAN
AAAA0QAAEAAAAH9AAJ	FORD	ANALYST
AAAA0QAAEAAAAH9AAK	SMITH	CLERK
AAAA0QAAEAAAAH9AAL	SCOTT	ANALYST
AAAA0QAAEAAAAH9AAM	ADAMS	CLERK
AAAA0QAAEAAAAH9AAN	MILLER	CLERK

8 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

---

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---

```
1  SELECT ROWID, Ename, Job
2  FROM Emp
3* WHERE ROWID BETWEEN 'AAAO0QAAEAAAAH9AA' || '&GiveStartROWID' AND
'AAAO0QAAEAAAAH9AA' || '&GiveEndROWID'
```

SQL> /

Enter value for givestartrowid: A

Enter value for giveendrowid: E

ROWID	ENAME	JOB
AAAO0QAAEAAAAH9AAA	KING	PRESIDENT
AAAO0QAAEAAAAH9AAB	BLAKE	MANAGER
AAAO0QAAEAAAAH9AAC	CLARK	MANAGER
AAAO0QAAEAAAAH9AAD	JONES	MANAGER
AAAO0QAAEAAAAH9AAE	MARTIN	SALESMAN

SQL> /

Enter value for givestartrowid: F

Enter value for giveendrowid: J

ROWID	ENAME	JOB
AAAO0QAAEAAAAH9AAF	ALLEN	SALESMAN
AAAO0QAAEAAAAH9AAG	TURNER	SALESMAN
AAAO0QAAEAAAAH9AAH	JAMES	CLERK
AAAO0QAAEAAAAH9AAI	WARD	SALESMAN
AAAO0QAAEAAAAH9AAJ	FORD	ANALYST

SQL> /

Enter value for givestartrowid: K

Enter value for giveendrowid: P

ROWID	ENAME	JOB
AAAO0QAAEAAAAH9AAK	SMITH	CLERK
AAAO0QAAEAAAAH9AAL	SCOTT	ANALYST
AAAO0QAAEAAAAH9AAM	ADAMS	CLERK
AAAO0QAAEAAAAH9AAN	MILLER	CLERK

SQL> cl scr

SQL> SELECT Ename, Sal, Job

2 FROM Emp

---

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---

```
3 WHERE ROWID = 'AAAMoOAAEAAAAzXAAJ';
FROM Emp
*
ERROR at line 2:
ORA-01410: invalid ROWID
```

SQL> cl scr

```
SQL> SELECT
2 B.Sal,
3 SUM(A.Sal) "Cum Sal"
4 FROM Emp A, Emp B
5 WHERE A.ROWID < = B.ROWID
6 GROUP BY B.ROWID, B.Sal;
```

SAL	Cum Sal
3000	22825
2975	13275
1300	29025
2850	7850
800	23625
950	18575
2450	10300
1600	16125
3000	26625
5000	5000
1100	27725
1250	19825
1500	17625
1250	14525

14 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT
2 B.Sal,
3 SUM(A.Sal) "Cum Sal"
4 FROM Emp A, Emp B
5 WHERE A.ROWID < = B.ROWID
6 GROUP BY B.ROWID, B.Sal
```

---

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---

```
7* ORDER BY B.Sal
SQL> /
```

SAL	Cum Sal
800	23625
950	18575
1100	27725
1250	14525
1250	19825
1300	29025
1500	17625
1600	16125
2450	10300
2850	7850
2975	13275
3000	22825
3000	26625
5000	5000

14 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT
2 B.Sal,
3 SUM(A.Sal) "Cum Sal"
4 FROM Emp A, Emp B
5 WHERE A.ROWID <= B.ROWID
6 GROUP BY B.ROWID, B.Sal
7* ORDER BY B.Sal DESC
SQL> /
```

SAL	Cum Sal
5000	5000
3000	22825
3000	26625
2975	13275
2850	7850
2450	10300
1600	16125
1500	17625

---

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---

1300	29025
1250	14525
1250	19825
1100	27725
950	18575
800	23625

14 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1  SELECT
2  B.Sal,
3  SUM(A.Sal) "Cum Sal"
4  FROM Emp A, Emp B
5  WHERE A.ROWID < = B.ROWID
6  GROUP BY B.ROWID, B.Sal
7* ORDER BY "Cum Sal"
SQL> /
```

SAL	Cum Sal
5000	5000
2850	7850
2450	10300
2975	13275
1250	14525
1600	16125
1500	17625
950	18575
1250	19825
3000	22825
800	23625
3000	26625
1100	27725
1300	29025

14 rows selected.

SQL> cl scr

```
SQL> SELECT Empno, Ename, MGR
2  FROM Emp
```

---

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---

```
3  START WITH Ename = 'KING'
4  CONNECT BY PRIOR Empno = MGR;
```

EMPNO	ENAME	MGR
7839	KING	
7566	JONES	7839
7788	SCOTT	7566
7876	ADAMS	7788
7902	FORD	7566
7369	SMITH	7902
7698	BLAKE	7839
7499	ALLEN	7698
7521	WARD	7698
7654	MARTIN	7698
7844	TURNER	7698
7900	JAMES	7698
7782	CLARK	7839
7934	MILLER	7782

14 rows selected.

```
SQL> UPDATE Emp
2  SET MGR = 7566
3  WHERE Ename = 'KING';
```

1 row updated.

```
SQL> SELECT Empno, Ename, MGR
2  FROM Emp;
```

EMPNO	ENAME	MGR
7839	KING	7566
7698	BLAKE	7839
7782	CLARK	7839
7566	JONES	7839
7654	MARTIN	7698
7499	ALLEN	7698
7844	TURNER	7698
7900	JAMES	7698
7521	WARD	7698
7902	FORD	7566
7369	SMITH	7902

---

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---

```
7788 SCOTT          7566
7876 ADAMS          7788
7934 MILLER         7782
```

14 rows selected.

```
SQL> SELECT Empno, Ename, MGR
  2  FROM Emp
  3  START WITH Ename = 'KING'
  4  CONNECT BY PRIOR Empno = MGR;
ERROR:
ORA-01436: CONNECT BY loop in user data
```

no rows selected

```
SQL> ED
Wrote file afiedt.buf
```

```
  1  SELECT Empno, Ename, MGR
  2  FROM Emp
  3  START WITH Ename = 'KING'
  4* CONNECT BY NOCYCLE PRIOR Empno = MGR
SQL> /
```

EMPNO	ENAME	MGR
7839	KING	7566
7566	JONES	7839
7788	SCOTT	7566
7876	ADAMS	7788
7902	FORD	7566
7369	SMITH	7902
7698	BLAKE	7839
7499	ALLEN	7698
7521	WARD	7698
7654	MARTIN	7698
7844	TURNER	7698
7900	JAMES	7698
7782	CLARK	7839
7934	MILLER	7782

14 rows selected.

---

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## Spool File For Oracle Students Trained by Mr.Sathish Yellanki

---

SQL> ED  
Wrote file afiedt.buf

```
1  SELECT
2  CONNECT_BY_ISCYCLE CycleBit,
3  Empno,
4  Ename,
5  MGR
6  FROM Emp
7  START WITH Ename = 'KING'
8* CONNECT BY NOCYCLE PRIOR Empno = MGR
SQL> /
```

CYCLEBIT	EMPNO	ENAME	MGR
0	7839	KING	7566
1	7566	JONES	7839
0	7788	SCOTT	7566
0	7876	ADAMS	7788
0	7902	FORD	7566
0	7369	SMITH	7902
0	7698	BLAKE	7839
0	7499	ALLEN	7698
0	7521	WARD	7698
0	7654	MARTIN	7698
0	7844	TURNER	7698
0	7900	JAMES	7698
0	7782	CLARK	7839
0	7934	MILLER	7782

14 rows selected.

SQL> ED  
Wrote file afiedt.buf

```
1  SELECT
2  CONNECT_BY_ISCYCLE CycleBit,
3  Empno,
4  Ename,
5  MGR
6  FROM Emp
7  WHERE CONNECT_BY_ISCYCLE <> 1
8  START WITH Ename = 'KING'
```

---

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9\* CONNECT BY NOCYCLE PRIOR Empno = MGR  
SQL> /

CYCLEBIT	EMPNO	ENAME	MGR
0	7839	KING	7566
0	7788	SCOTT	7566
0	7876	ADAMS	7788
0	7902	FORD	7566
0	7369	SMITH	7902
0	7698	BLAKE	7839
0	7499	ALLEN	7698
0	7521	WARD	7698
0	7654	MARTIN	7698
0	7844	TURNER	7698
0	7900	JAMES	7698
0	7782	CLARK	7839
0	7934	MILLER	7782

13 rows selected.

SQL> ROLLBACK;

Rollback complete.

SQL> cl scr

SQL> SELECT Empno, Ename, MGR  
2 FROM Emp  
3 START WITH Ename = 'KING'  
4 CONNECT BY PRIOR Empno = MGR;

EMPNO	ENAME	MGR
7839	KING	
7566	JONES	7839
7788	SCOTT	7566
7876	ADAMS	7788
7902	FORD	7566
7369	SMITH	7902
7698	BLAKE	7839
7499	ALLEN	7698
7521	WARD	7698
7654	MARTIN	7698

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```
7844 TURNER          7698
7900 JAMES           7698
7782 CLARK            7839
7934 MILLER          7782
```

14 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT
2  CONNECT_BY_ISLEAF LeafBit,
3  Empno,
4  Ename,
5  MGR
6  FROM Emp
7  START WITH Ename = 'KING'
8* CONNECT BY PRIOR Empno = MGR
SQL> /
```

LEAFBIT	EMPNO	ENAME	MGR
0	7839	KING	
0	7566	JONES	7839
0	7788	SCOTT	7566
1	7876	ADAMS	7788
0	7902	FORD	7566
1	7369	SMITH	7902
0	7698	BLAKE	7839
1	7499	ALLEN	7698
1	7521	WARD	7698
1	7654	MARTIN	7698
1	7844	TURNER	7698
1	7900	JAMES	7698
0	7782	CLARK	7839
1	7934	MILLER	7782

14 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT
2  CONNECT_BY_ISLEAF LeafBit,
```

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```
3 Empno ,
4 Ename ,
5 MGR
6 FROM Emp
7 WHERE CONNECT_BY_ISLEAF = 1
8 START WITH Ename = 'KING'
9* CONNECT BY PRIOR Empno = MGR
SQL> /
```

LEAFBIT	EMPNO	ENAME	MGR
1	7876	ADAMS	7788
1	7369	SMITH	7902
1	7499	ALLEN	7698
1	7521	WARD	7698
1	7654	MARTIN	7698
1	7844	TURNER	7698
1	7900	JAMES	7698
1	7934	MILLER	7782

8 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT ColumnName
2 FROM TableName
3 WHERE ColumnName = Value
4 SET_OPERATOR
5 SELECT ColumnName
6 FROM TableName
7 WHERE ColumnName = Value
8
```

```
SQL> cl scr
```

```
SQL> SELECT Ename
2 FROM Emp
3 WHERE Deptno = 20
4 UNION
5 SELECT Ename, Job
6 FROM Emp
7 WHERE Deptno = 30;
SELECT Ename
*
```

ERROR at line 1:

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---

ORA-01789: query block has incorrect number of result columns

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Ename, Sal
2  FROM Emp
3  WHERE Deptno = 20
4  UNION
5  SELECT Ename, Job
6  FROM Emp
7* WHERE Deptno = 30
```

SQL> /

```
SELECT Ename, Sal
        *
```

ERROR at line 1:

ORA-01790: expression must have same datatype as corresponding expression

SQL> cl scr

```
SQL> SELECT Ename
2  FROM Emp
3  WHERE Deptno = 10
4  UNION
5  SELECT Ename
6  FROM Emp
7  WHERE Deptno = 30;
```

ENAME

-----

ALLEN  
BLAKE  
CLARK  
JAMES  
KING  
MARTIN  
MILLER  
TURNER  
WARD

9 rows selected.

---

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---

```
SQL> ED
Wrote file afiedt.buf

 1  SELECT Ename
 2  FROM Emp
 3  WHERE Deptno = 10
 4  ORDER BY Ename
 5  UNION
 6  SELECT Ename
 7  FROM Emp
 8* WHERE Deptno = 30
SQL> /
UNION
*
ERROR at line 5:
ORA-00933: SQL command not properly ended
```

```
SQL> ED
Wrote file afiedt.buf

 1  SELECT Ename, Job
 2  FROM Emp
 3  WHERE Deptno = 10
 4  UNION
 5  SELECT Ename, Job
 6  FROM Emp
 7  WHERE Deptno = 30
 8* ORDER BY Job
SQL> /
```

ENAME	JOB
JAMES	CLERK
MILLER	CLERK
BLAKE	MANAGER
CLARK	MANAGER
KING	PRESIDENT
ALLEN	SALESMAN
MARTIN	SALESMAN
TURNER	SALESMAN
WARD	SALESMAN

9 rows selected.

---

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---

```
SQL> ED
Wrote file afiedt.buf
```

```
1  (
2    SELECT Ename, Job
3    FROM Emp
4    WHERE Deptno = 10
5    UNION
6    SELECT Ename, Job
7    FROM Emp
8    WHERE Deptno = 30
9  )
10* ORDER BY Job
SQL> /
```

ENAME	JOB
JAMES	CLERK
MILLER	CLERK
BLAKE	MANAGER
CLARK	MANAGER
KING	PRESIDENT
ALLEN	SALESMAN
MARTIN	SALESMAN
TURNER	SALESMAN
WARD	SALESMAN

9 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT Ename, Job
2  FROM Emp
3  WHERE Deptno = 10
4  UNION
5  SELECT Dname, Loc
6  FROM Dept
7  WHERE Deptno = 10
8* ORDER BY Dname
SQL> /
ORDER BY Dname
*
```

---

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---

ERROR at line 8:  
ORA-00904: "DNAME": invalid identifier

SQL> ED  
Wrote file afiedt.buf

```
1  (  
2    SELECT Ename, Job  
3    FROM Emp  
4    WHERE Deptno = 10  
5    UNION  
6    SELECT Dname, Loc  
7    FROM Dept  
8    WHERE Deptno = 10  
9  )  
10* ORDER BY Dname  
SQL> /  
ORDER BY Dname  
*
```

ERROR at line 10:  
ORA-00904: "DNAME": invalid identifier

SQL> ED  
Wrote file afiedt.buf

```
1  (  
2    SELECT Ename, Job  
3    FROM Emp  
4    WHERE Deptno = 10  
5    UNION  
6    SELECT Dname, Loc  
7    FROM Dept  
8    WHERE Deptno = 10  
9  )  
10* ORDER BY 1  
SQL> /
```

ENAME	JOB
ACCOUNTING	NEW YORK
CLARK	MANAGER
KING	PRESIDENT

---

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---

MILLER                      CLERK

SQL> cl scr

```
SQL> SELECT Job
      2 FROM Emp
      3 WHERE Deptno = 10
      4 UNION
      5 SELECT Job
      6 FROM Emp
      7 WHERE Deptno = 30;
```

JOB

-----  
CLERK  
MANAGER  
PRESIDENT  
SALESMAN

SQL> ED  
Wrote file afiedt.buf

```
      1 SELECT Job
      2 FROM Emp
      3 WHERE Deptno = 10
      4 UNION ALL
      5 SELECT Job
      6 FROM Emp
      7* WHERE Deptno = 30
SQL> /
```

JOB

-----  
PRESIDENT  
MANAGER  
CLERK  
MANAGER  
SALESMAN  
SALESMAN  
SALESMAN  
SALESMAN  
CLERK  
SALESMAN

9 rows selected.

---

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---

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT Job
2  FROM Emp
3  WHERE Deptno = 10
4  INTERSECT
5  SELECT Job
6  FROM Emp
7* WHERE Deptno = 30
SQL> /
```

```
JOB
-----
```

```
CLERK
MANAGER
```

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT Job
2  FROM Emp
3  WHERE Deptno = 10
4  MINUS
5  SELECT Job
6  FROM Emp
7* WHERE Deptno = 30
SQL> /
```

```
JOB
-----
```

```
PRESIDENT
```

```
SQL> cl scr
```

```
SQL> SELECT Ename
2  FROM Emp
3  UNION
4  SELECT Dname
5  FROM Dept;
```

```
ENAME
-----
```

---

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---

ACCOUNTING  
ADAMS  
ALLEN  
BLAKE  
CLARK  
FORD  
JAMES  
JONES  
KING  
MARTIN  
MILLER  
OPERATIONS  
RESEARCH  
SALES  
SCOTT  
SMITH  
TURNER

ENAME

-----

WARD

18 rows selected.

SQL> cl scr

SQL> SELECT Dname, Loc  
2 FROM Dept  
3 WHERE Deptno = &GDeptno  
4 UNION  
5 SELECT Ename, Job, Sal  
6 FROM Emp  
7 WHERE Deptno = &GDeptno02;

Enter value for gdeptno: 10

Enter value for gdeptno02: 10

SELECT Dname, Loc

\*

ERROR at line 1:

ORA-01789: query block has incorrect number of result columns

SQL> ED

Wrote file afiedt.buf

---

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```
1 SELECT Dname, Loc, NULL Ename, NULL Job, NULL Sal
2 FROM Dept
3 WHERE Deptno = &GDeptno01
4 UNION
5 SELECT NULL, NULL, Ename, Job, Sal
6 FROM Emp
7* WHERE Deptno = &GDeptno02
SQL> /
Enter value for gdeptno01: 10
Enter value for gdeptno02: 10
```

DNAME	LOC	ENAME	JOB	SAL
ACCOUNTING	NEW YORK	CLARK	MANAGER	2450
		KING	PRESIDENT	5000
		MILLER	CLERK	1300

```
SQL> /
Enter value for gdeptno01: 30
Enter value for gdeptno02: 30
```

DNAME	LOC	ENAME	JOB	SAL
SALES	CHICAGO	ALLEN	SALESMAN	1600
		BLAKE	MANAGER	2850
		JAMES	CLERK	950
		MARTIN	SALESMAN	1250
		TURNER	SALESMAN	1500
		WARD	SALESMAN	1250

7 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Dname, Loc, NULL Ename, NULL Job, NULL Sal
2 FROM Dept
3 WHERE Deptno = &GDeptno01
4 UNION
5 SELECT NULL, NULL, Ename, Job, Sal
6 FROM Emp
7 WHERE Deptno = &GDeptno02
```

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```
8 UNION
9 SELECT NULL, NULL, NULL, NULL, SUM(Sal)
10 FROM Emp
11* WHERE Deptno = &GDeptno03
SQL> /
Enter value for gdeptno01: 10
Enter value for gdeptno02: 10
Enter value for gdeptno03: 10
```

DNAME	LOC	ENAME	JOB	SAL
ACCOUNTING	NEW YORK	CLARK	MANAGER	2450
		KING	PRESIDENT	5000
		MILLER	CLERK	1300
				8750

```
SQL> /
Enter value for gdeptno01: 20
Enter value for gdeptno02: 20
Enter value for gdeptno03: 20
```

DNAME	LOC	ENAME	JOB	SAL
RESEARCH	DALLAS	ADAMS	CLERK	1100
		FORD	ANALYST	3000
		JONES	MANAGER	2975
		SCOTT	ANALYST	3000
		SMITH	CLERK	800
				10875

7 rows selected.

```
SQL> SET AUTOTRACE ON EXPLAIN
SQL> SELECT Dname, Loc, NULL Ename, NULL Job, NULL Sal
2 FROM Dept
3 WHERE Deptno = &GDeptno01
4 UNION
5 SELECT NULL, NULL, Ename, Job, Sal
6 FROM Emp
7 WHERE Deptno = &GDeptno02;
Enter value for gdeptno01: 10
Enter value for gdeptno02: 10
```

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DNAME	LOC	ENAME	JOB	SAL
ACCOUNTING	NEW YORK	CLARK	MANAGER	2450
		KING	PRESIDENT	5000
		MILLER	CLERK	1300

Execution Plan

Plan hash value: 2936292807

Id	Operation	Name	Rows	Bytes
Cost (%CPU)	Time			
0	SELECT STATEMENT		4	147
6 (84)	00:00:01			
1	SORT UNIQUE		4	147
6 (84)	00:00:01			
2	UNION-ALL			
3	TABLE ACCESS BY INDEX ROWID	DEPT	1	30
1 (0)	00:00:01			
* 4	INDEX UNIQUE SCAN	DEPT_PRIMARY_KEY	1	
1 (0)	00:00:01			
* 5	TABLE ACCESS FULL	EMP	3	117
3 (0)	00:00:01			

Predicate Information (identified by operation id):

4 - access("DEPTNO"=10)  
5 - filter("DEPTNO"=10)

Note

- dynamic sampling used for this statement

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```
SQL> SELECT Dname, Loc, NULL Ename, NULL Job, NULL Sal
2 FROM Dept
3 WHERE Deptno = &GDeptno01
4 UNION
5 SELECT NULL, NULL, Ename, Job, Sal
6 FROM Emp
7 WHERE Deptno = &GDeptno02
8 UNION
9 SELECT NULL, NULL, NULL, NULL, SUM(Sal)
10 FROM Emp
11 WHERE Deptno = &GDeptno03;
```

Enter value for gdeptno01: 30

Enter value for gdeptno02: 30

Enter value for gdeptno03: 30

DNAME	LOC	ENAME	JOB	SAL
SALES	CHICAGO	ALLEN	SALESMAN	1600
		BLAKE	MANAGER	2850
		JAMES	CLERK	950
		MARTIN	SALESMAN	1250
		TURNER	SALESMAN	1500
		WARD	SALESMAN	1250
				9400

8 rows selected.

Execution Plan

Plan hash value: 1118198403

Id	Operation	Name	Rows	Bytes
Cost (%CPU)	Time			
0	SELECT STATEMENT		8	290
10 (90)	00:00:01			
1	SORT UNIQUE		8	290
10 (90)	00:00:01			

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2	UNION-ALL			
3	TABLE ACCESS BY INDEX ROWID	DEPT	1	30
1	(0)   00:00:01			
* 4	INDEX UNIQUE SCAN	DEPT_PRIMARY_KEY	1	
1	(0)   00:00:01			
* 5	TABLE ACCESS FULL	EMP	6	234
3	(0)   00:00:01			
6	SORT AGGREGATE		1	26
4	(25)   00:00:01			
* 7	TABLE ACCESS FULL	EMP	6	156
3	(0)   00:00:01			

Predicate Information (identified by operation id):

4 - access("DEPTNO"=30)  
5 - filter("DEPTNO"=30)  
7 - filter("DEPTNO"=30)

Note

- dynamic sampling used for this statement

SQL> cl scr

SQL> SELECT Deptno, SUM(Sal)  
2 FROM Emp  
3 GROUP BY Deptno;

DEPTNO	SUM(SAL)
30	9400
20	10875
10	8750

Execution Plan

Plan hash value: 4067220884

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Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		14	364	4 (25)	00:00:01
1	HASH GROUP BY		14	364	4 (25)	00:00:01
2	TABLE ACCESS FULL	EMP	14	364	3 (0)	00:00:01

Note

- dynamic sampling used for this statement

```
SQL> SELECT SUM(Sal)
      2  FROM Emp;
```

SUM(SAL)

29025

Execution Plan

Plan hash value: 2083865914

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		1	13	3 (0)	00:00:01
1	SORT AGGREGATE		1	13		
2	TABLE ACCESS FULL	EMP	14	182	3 (0)	00:00:01

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Note

- dynamic sampling used for this statement

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Deptno, SUM(Sal), OrgSal
2  FROM Emp,
3  (
4  SELECT SUM(Sal) OrgSal
5  FROM Emp
6  )
7* GROUP BY Deptno, OrgSal
8  /
```

DEPTNO	SUM(SAL)	ORGSAL
10	8750	29025
20	10875	29025
30	9400	29025

Execution Plan

Plan hash value: 3003679369

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		14	546	7 (15)	00:00:01
1	HASH GROUP BY		14	546	7 (15)	00:00:01
2	NESTED LOOPS		14	546	6 (0)	00:00:01
3	VIEW		1	13	3 (0)	00:00:01

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```
-----
| 4 | SORT AGGREGATE | | 1 | 13 | |
| 5 | TABLE ACCESS FULL| EMP | 14 | 182 | 3 (0) |
00:00:01 |
| 6 | TABLE ACCESS FULL | EMP | 14 | 364 | 3 (0) |
00:00:01 |
-----
```

Note

-----  
- dynamic sampling used for this statement

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Deptno, SUM(Sal),
2 (
3 SELECT SUM(Sal)
4 FROM Emp
5 ) OrgSal
6 FROM Emp,
7* GROUP BY Deptno
```

SQL> /

GROUP BY Deptno

\*

ERROR at line 7:

ORA-00903: invalid table name

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Deptno, SUM(Sal),
2 (
3 SELECT SUM(Sal)
4 FROM Emp
5 ) OrgSal
6 FROM Emp
7* GROUP BY Deptno
```

SQL> /

```
DEPTNO    SUM(SAL)    ORGSAL
-----
```

-----  
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```
30      9400      29025
20     10875      29025
10      8750      29025
```

### Execution Plan

Plan hash value: 2065184867

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		14	364	4 (25)	00:00:01
1	SORT AGGREGATE		1	13		
2	TABLE ACCESS FULL	EMP	14	182	3 (0)	00:00:01
3	HASH GROUP BY		14	364	4 (25)	00:00:01
4	TABLE ACCESS FULL	EMP	14	364	3 (0)	00:00:01

### Note

- dynamic sampling used for this statement

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Deptno, SUM(Sal) SalSum
2  FROM Emp
3  GROUP BY Deptno
4  UNION
5  SELECT NULL, SUM(Sal)
6* FROM Emp
SQL> /
```

DEPTNO	SALSUM
--------	--------

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```
-----
      10      8750
      20     10875
      30      9400
          29025
```

Execution Plan

Plan hash value: 768573151

```
-----
| Id  | Operation              | Name | Rows  | Bytes | Cost (%CPU)| Time | |
|---|---|---|---|---|---|---|---|
|  0  | SELECT STATEMENT       |      |    15 |    377 |     9  (67)| 00:00:01 |
|  1  | SORT UNIQUE            |      |    15 |    377 |     9  (67)| 00:00:01 |
|  2  | UNION-ALL              |      |       |       |       |       |       |
|  3  |   HASH GROUP BY        |      |    14 |    364 |     5  (40)| 00:00:01 |
|  4  |     TABLE ACCESS FULL | EMP  |    14 |    364 |     3   (0)| 00:00:01 |
|  5  |     SORT AGGREGATE      |      |     1 |     13 |     4  (25)| 00:00:01 |
|  6  |     TABLE ACCESS FULL | EMP  |    14 |    182 |     3   (0)| 00:00:01 |
|-----|-----|-----|-----|-----|-----|
```

Note

- dynamic sampling used for this statement

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT Job, SUM(Sal) SalSum
2  FROM Emp
3  GROUP BY Job
```

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```
4 UNION
5 SELECT NULL, SUM(Sal)
6* FROM Emp
SQL> /
```

JOB	SALSUM
ANALYST	6000
CLERK	4150
MANAGER	8275
PRESIDENT	5000
SALESMAN	5600
	29025

6 rows selected.

Execution Plan

Plan hash value: 768573151

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		15	279	9 (67)	00:00:01
1	SORT UNIQUE		15	279	9 (67)	00:00:01
2	UNION-ALL					
3	HASH GROUP BY		14	266	5 (40)	00:00:01
4	TABLE ACCESS FULL	EMP	14	266	3 (0)	00:00:01
5	SORT AGGREGATE		1	13	4 (25)	00:00:01
6	TABLE ACCESS FULL	EMP	14	182	3 (0)	00:00:01

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---

Note

-----

- dynamic sampling used for this statement

SQL> cl scr

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Deptno, Job, SUM(Sal) SalSum
2  FROM Emp
3  GROUP BY Deptno, Job
4  UNION
5  SELECT Deptno, NULL, SUM(Sal)
6  FROM Emp
7* GROUP BY Deptno
SQL> /
```

DEPTNO	JOB	SALSUM
10	CLERK	1300
10	MANAGER	2450
10	PRESIDENT	5000
10		8750
20	ANALYST	6000
20	CLERK	1900
20	MANAGER	2975
20		10875
30	CLERK	950
30	MANAGER	2850
30	SALESMAN	5600
30		9400

12 rows selected.

Execution Plan

-----

Plan hash value: 961949858

-----

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
----	-----------	------	------	-------	-------------	------

-----

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```
-----
-----
| 0 | SELECT STATEMENT | | 28 | 812 | 10 (70) |
00:00:01 |
| 1 | SORT UNIQUE | | 28 | 812 | 10 (70) |
00:00:01 |
| 2 | UNION-ALL | | | |
|
| 3 | HASH GROUP BY | | 14 | 448 | 5 (40) |
00:00:01 |
| 4 | TABLE ACCESS FULL| EMP | 14 | 448 | 3 (0) |
00:00:01 |
| 5 | HASH GROUP BY | | 14 | 364 | 5 (40) |
00:00:01 |
| 6 | TABLE ACCESS FULL| EMP | 14 | 364 | 3 (0) |
00:00:01 |
-----
-----
```

Note

- dynamic sampling used for this statement

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Deptno, Job, SUM(Sal) SalSum
2 FROM Emp
3 GROUP BY Deptno, Job
4 UNION
5 SELECT Deptno, NULL, SUM(Sal)
6 FROM Emp
7 GROUP BY Deptno
8 UNION
9 SELECT NULL, NULL, SUM(Sal)
10* FROM Emp
SQL> /
```

DEPTNO	JOB	SALSUM
10	CLERK	1300
10	MANAGER	2450
10	PRESIDENT	5000
10		8750

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```
20 ANALYST          6000
20 CLERK             1900
20 MANAGER           2975
20                   10875
30 CLERK              950
30 MANAGER           2850
30 SALESMAN           5600
30                   9400
                     29025
```

13 rows selected.

Execution Plan

Plan hash value: 3412076862

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		29	825	14 (79)	
1	SORT UNIQUE		29	825	14 (79)	
2	UNION-ALL					
3	HASH GROUP BY		14	448	5 (40)	
4	TABLE ACCESS FULL	EMP	14	448	3 (0)	
5	HASH GROUP BY		14	364	5 (40)	
6	TABLE ACCESS FULL	EMP	14	364	3 (0)	
7	SORT AGGREGATE		1	13	4 (25)	
8	TABLE ACCESS FULL	EMP	14	182	3 (0)	

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---

Note

-----

- dynamic sampling used for this statement

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Deptno, Job, SUM(Sal) SalSum
2  FROM Emp
3  GROUP BY Deptno, Job
4  UNION
5  SELECT Deptno, NULL, SUM(Sal)
6  FROM Emp
7  GROUP BY Deptno
8  UNION
9  SELECT NULL, Job, SUM(Sal)
10 FROM Emp
11 GROUP BY Job
12 UNION
13 SELECT NULL, NULL, SUM(Sal)
14* FROM Emp
SQL> /
```

DEPTNO	JOB	SALSUM
10	CLERK	1300
10	MANAGER	2450
10	PRESIDENT	5000
10		8750
20	ANALYST	6000
20	CLERK	1900
20	MANAGER	2975
20		10875
30	CLERK	950
30	MANAGER	2850
30	SALESMAN	5600
30		9400
	ANALYST	6000
	CLERK	4150
	MANAGER	8275
	PRESIDENT	5000
	SALESMAN	5600

DEPTNO	JOB	SALSUM
--------	-----	--------

---

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29025

18 rows selected.

Execution Plan

Plan hash value: 3471315269

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		43	1091	19 (85)	
1	SORT UNIQUE		43	1091	19 (85)	
2	UNION-ALL					
3	HASH GROUP BY		14	448	5 (40)	
4	TABLE ACCESS FULL	EMP	14	448	3 (0)	
5	HASH GROUP BY		14	364	5 (40)	
6	TABLE ACCESS FULL	EMP	14	364	3 (0)	
7	HASH GROUP BY		14	266	5 (40)	
8	TABLE ACCESS FULL	EMP	14	266	3 (0)	
9	SORT AGGREGATE		1	13	4 (25)	
10	TABLE ACCESS FULL	EMP	14	182	3 (0)	

Note

- dynamic sampling used for this statement

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```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT Deptno, NULL Job, SUM(Sal) SalSum
2  FROM Emp
3  GROUP BY Deptno
4  UNION
5  SELECT NULL, Job, SUM(Sal)
6  FROM Emp
7* GROUP BY Job
SQL> /
```

DEPTNO	JOB	SALSUM
10		8750
20		10875
30		9400
	ANALYST	6000
	CLERK	4150
	MANAGER	8275
	PRESIDENT	5000
	SALESMAN	5600

8 rows selected.

Execution Plan

Plan hash value: 961949858

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		28	630	10 (70)	00:00:01
1	SORT UNIQUE		28	630	10 (70)	00:00:01
2	UNION-ALL					

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```
-----
| 3 | HASH GROUP BY | 14 | 364 | 5 (40) |
00:00:01 |
| 4 | TABLE ACCESS FULL| EMP | 14 | 364 | 3 (0) |
00:00:01 |
| 5 | HASH GROUP BY | 14 | 266 | 5 (40) |
00:00:01 |
| 6 | TABLE ACCESS FULL| EMP | 14 | 266 | 3 (0) |
00:00:01 |
-----
```

Note

-----  
- dynamic sampling used for this statement

SQL> SPOOL OFF

-----  
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